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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER
FEARER, MARK D

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/763,422	JIN ET AL.
Office Action Summary	Examiner	Art Unit	
	MARK D. FEARER	2443	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 December 2008</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-27</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-27</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's Amendment filed 01 December 2008 is acknowledged.

2. Claim 28 is cancelled.

3. Claims 1-27 are pending in the present application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5.   Claims 1, 5-7, 11, 14, 18-20, 24 and 27 are rejected under 35 U.S.C. 102(b) as

being unpatentable over Belknap et al. (US 5668948 A) in view of Kato et al. (US

20020145702 A1).

        Consider claims 1, 14 and 27. Belknap et al. discloses a system and method of

video splitting and allocation for clustered video servers, the method comprising:

defining a structure of a network packet (("Referring again to FIG. 1B a tape storage

node 17 includes a tape library controller interface 24 which enables access to multiple

tape records contained in a tape library 26. A further interface 28 enables access to

other tape libraries via an SCSI bus interconnection. An internal system memory 30

enables a buffering of video data received from either of interfaces 24 or 28, or via DMA

data transfer path 32. System memory block 30 may be a portion of a PC 34 which

includes software 36 for tape library and file management actions. A switch interface

and buffer module 38 (used also in disk storage nodes 16, communication nodes 14,

and control nodes 18) enables interconnection between the tape storage node 17 and

low latency switch 12. That is, the module 38 is responsible for partitioning a data

transfer into packets and adding the header portion to each packet that the switch 12

employs to route the packet. When receiving a packet from the switch 12 the module 38

is responsible for stripping off the header portion before locally buffering or otherwise

handling the received data.") column 6 lines 66-67 and column 7 lines 1-17), a structure

of a distributed control file (("When commands are issued over the control interface to

start the streaming of data to an end user, control node 18 selects and activates an

appropriate communication node 14 and passes control information indicating to it the

location of the data file segments on the storage nodes 16, 17. The communications

node 14 activates the storage nodes 16, 17 that need to be involved and proceeds to

communicate with these nodes, via command packets sent through the low latency

switch 12, to begin the movement of data.") column 8 lines 47-55), and a structure of a

clip file (("Application commands are issued to media streamer 10 over the control

interface. When data load commands are issued, the control node breaks the incoming

data file into segments (i.e. data blocks) and spreads it across one or more storage

nodes. Material density and the number of simultaneous users of the data affect the

placement of the data on storage nodes 16, 17. Increasing density and/or simultaneous

users implies the use of more storage nodes for capacity and bandwidth.") column 8

lines 38-46); analyzing information of streaming media source files (("A media streamer

in accordance with this invention comprises at least one storage node for storing a

digital representation of a video presentation. The video presentation requires a time T

to present in its entirety, and is stored as a plurality of N data blocks, each data block

storing data corresponding approximately to a T/N period of the video presentation. The

media streamer further comprises a plurality of communication nodes each having at

least one input port and at least one output port; a circuit switch connected between the

at least one storage node and input ports of the plurality of communication nodes, the

circuit switch selectively coupling one or more of the input ports to the at least one

storage node to enable the digital representation stored thereat to appear at one or

more of the output ports; and at least one control node coupled at least to the plurality of

communication nodes and to the at least one storage node for enabling any one of the

N blocks to appear at any output port of any of the plurality of communication nodes.")

column 3 lines 1-18); analyzing a clip file allocating requirements (column 8 lines 38-

55); analyzing the streaming media source files to construct a splitting task list and

relevant control files, according to the client's requirements (("Control node 18 receives

a VS-CONNECT-LIST command with play subcommands indicating that all or part of

FILE1, FILE2 and FILE3 are to be played in sequence. Control node 18 determines the

maximum data rate of the files and allocates that resource on a communication node

14. The allocated communication node 14 is given the detailed play list and initiates the

delivery of the isochronous stream.") column 9 lines 65-67 and column 10 lines 1-5);

creating several threads to split the streaming media source files, wherein each thread

is responsible for splitting a streaming media source file (("Each thread works off a

queue of requests. The request queue 106 for the output thread 102 contains requests

that identify the stream and that points to an associated buffer that needs to be emptied.

These requests are arranged in order by a time at which they need to be written to the

video output interface. When the output thread 102 empties a buffer, it marks it as

empty and invokes the scheduler function 104 to queue the request in an input queue

108 for the stream to the input thread (for the buffer to be filled). The queue 108 for the

Input thread 100 is also arranged in order by a time at which buffers need to be filled.")

column 14 lines 26-36 ("Import/Export functions are used to move video data into and
out of the media streamer 10. When a video is moved into media streamer 10 (Import)
from the client control system, the source of the video data is specified as a file or a
device of the client control system. The target of the video data is specified with a
unique name within media streamer 10. When a video is moved out of media streamer
10 (Export) to the client control system, the source of the video data is specified by its
name within media streamer 10, and the target of the video data is specified as a file or
a device of the client control system.") column 19 lines 26-35); and distributing the clip
files to relevant storage server nodes (("Storage nodes 16, 17 are managed as a
heterogeneous group, each with a potentially different bandwidth (stream) capability
and physical definition. The VS-CREATE command directs media streamer 10 to
allocate storage in one or more storage nodes 16, 17 for a multimedia file and its
associated metadata. The VS-CREATE command specifies both the stream density and
the maximum number of simultaneous users required.") column 9 lines 48-55).

However, Belknap et al. fails to disclose a splitting requirement of the streaming
media source files into clip files, the splitting requirement being one of clip placement
based on clip time and clip placement based on quantity of clip splitting, and then
defining a split files placement strategy and analyzing a clip file allocating requirements,
according to the client's requirements.

Kato et al. discloses a splitting requirement of the streaming media source files
into clip files, the splitting requirement being one of clip placement based on clip time
and clip placement based on quantity of clip splitting, and then defining a split files

placement strategy and analyzing a clip file allocating requirements (("The controller 23

analyzes data input to the demultiplexer 26 to determine the re-encoding method for the

video stream (change of picture_coding_type and assignment of the quantity of

encoding bits for re-encoding) and the re-multiplexing system to send the system to the

AV encoder 15 and to the multiplexer 16. The demultiplexer 26 then separates the input

stream into the video stream (V), audio stream (A) and the system information (S). The

video stream may be classed into data input to the audio decoder 27 and data input to

the multiplexer 16. The former is data needed for re-encoding, and is decoded by the

audio decoder 27, with the decoded picture being then re-encoded by the AV encoder

15 and thereby caused to become a video stream. The latter data is data copied from

an original stream without re-encoding. The audio stream and the system information

are directly input to the multiplexer 16. The multiplexer 16 multiplexes an input stream,

based on the information input from the controller 23, to output a multiplexed stream,

which is processed by the ECC unit 20 and the modulation unit 21 so as to be sent to

the write unit 22. The write unit 22 records an AV stream on the recording medium 100

based on the control signals supplied from the controller 23. The application database

information and the operation based on this information, such as playback and editing,

are hereinafter explained. FIG. 2 shows the structure of an application format having

two layers, that is PlayList and Clip, for AV stream management. The Volume

Information manages all Clips and PlayLists in the disc. Here, one AV stream and the

ancillary information thereof, paired together, is deemed to be an object, and is termed

Clip. The AV stream file is termed a Clip AV stream file, with the ancillary information

being termed the Clip Information file. One Clip AV stream file stores data

corresponding to an MPEG-2 transport stream arranged in a structure prescribed by the

application format. By and large, a file is treated as a byte string. The contents of the

Clip AV stream file are expanded on the time axis, with entry points in the Clip (I-picture)

being mainly specified on the time basis. When a time stamp of an access point to a

preset Clip is given, the Clip Information file is useful in finding the address information

at which to start data readout in the Clip AV stream file.") paragraphs 0163-0167

("STC_Info is now explained. The time domain in the MPEG-2 transport stream not

containing STC discontinuous points (discontinuous points of the system time base) is

termed the STC_sequence. In the Clip, STC_sequence is specified by the value of

STC_sequence_id. FIGS. 50A and 50B illustrate a continuous STC domain. The same

STC values never appear in the same STC_sequence, although the maximum time

length of Clip is limited, as explained subsequently. Therefore, the same PTS values

also never appear in the same STC_sequence. If the AV stream contains N STC

discontinuous points, where N>0, the Clip system time base is split into (N+1)

STC_sequences.") paragraph 0317).

Belknap et al. discloses a prior art system and method of video splitting and

allocation for clustered video servers, the method comprising: defining a structure of a

network packet, a structure of a distributed control file, and a structure of a clip file;

analyzing information of streaming media source files; analyzing a clip file allocating

requirements; analyzing the streaming media source files to construct a splitting task list

and relevant control files, according to the client's requirements; creating several

threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file; and distributing the clip files to relevant storage server nodes upon which the claimed invention can be seen as an improvement.

Kato et al. discloses a prior art comparable splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split files placement strategy and analyzing a clip file allocating requirements.

Thus, the manner of enhancing a particular device (splitting requirement of the streaming media source files into clip files, the splitting requirement being one of clip placement based on clip time and clip placement based on quantity of clip splitting, and then defining a split files placement strategy and analyzing a clip file allocating requirements) was made part of the ordinary capabilities of one skilled in the art based upon the teaching of such improvement in Kato et al. Accordingly, one of ordinary skill in the art would have been capable of applying this known improvement technique in the same manner to the prior art system and method of video splitting and allocation for clustered video servers, the method comprising: defining a structure of a network packet, a structure of a distributed control file, and a structure of a clip file; analyzing information of streaming media source files; analyzing a clip file allocating requirements; analyzing the streaming media source files to construct a splitting task list and relevant control files, according to the client's requirements; creating several threads to split the streaming media source files, wherein each thread is responsible for splitting a streaming media source file; and distributing the clip files to relevant storage server

nodes of Belknap et al. and the results would have been predictable to one of ordinary

skill in the art, namely, one skilled in the art would have readily recognized a system

and method of producing quality streaming video.

Consider claims 5 and 18, as applied to claims 1 and 14, respectively. Belknap et

al., as modified by Kato et al., discloses a method wherein the structure of the clip files

includes a header of the clip files, an information header of media streams, and the

network packet of a media streaming service (Belknap et al., column 6 lines 66-67 and

column 7 lines 1-17).

Consider claims 6 and 19, as applied to claims 1 and 14, respectively. Belknap et

al., as modified by Kato et al., discloses a method wherein the analyzing of the

streaming media source files includes, analyzing a number of logical time units in the

media source files, and obtaining time information of a header and a number of media

stream for each logic time unit (("The dynamic allocation is achieved by grouping two or

more of the physical switch interfaces, using appropriate routing headers for the switch

12, into one logical switch interface 18a. The video data (on a read, for example) is then

split between the two physical interfaces. This is facilitated by striping the data across

multiple storage units as described previously. The receiving node combines the video

data back into a single logical stream. As an example, in FIG. 18 the switch interface is

rated at 2.times. MB/sec. full duplex i.e., .times. MB/sec. in each direction. But video

data is usually sent only in one direction (from the storage node into the switch).

Therefore only .times. MB/sec. of video bandwidth is delivered from the storage node, even though the node has twice that capability (2.times.). The storage node is under utilized. The switch interface of FIG. 19 dynamically allocates the entire 2.times. MB/sec. bandwidth to transmitting video from the storage node into the switch. The result is increased bandwidth from the node, higher bandwidth from the video server, and a lower cost per video stream.") Belknap et al., column 32 lines 60-67 and column 33 lines 1-11).

Consider claims 7 and 20, as applied to claims 6 and 19, respectively. Belknap et al., as modified by Kato et al., discloses a method further comprising repeating the analysis until all the logic time units are finished and obtaining a total playback duration, a storage space of the media source files, and an ID of the media source files based on the structure of the clip file (("A2. File system 166 reads a part of Sk into a cache buffer in file system 166. A3. File system 166 copies the cache buffer into a buffer in video driver 170. Steps A2 and A3 are repeated multiple times. A5. Video driver 170 copies part of Sk to a buffer in video driver 170. A6. Video driver 170 writes the buffer to video port 1 (176). Steps A5 and A6 are repeated multiple times.") Belknap et al., column 22 lines 58-67 and column 23 line 1).

Consider claims 11 and 24, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al., discloses a method wherein the client's requirements include obtaining and analyzing splitting time requirements (("A media streamer in

accordance with this invention comprises at least one storage node for storing a digital representation of a video presentation. The video presentation requires a time T to present in its entirety, and is stored as a plurality of N data blocks, each data block storing data corresponding approximately to a T/N period of the video presentation. The media streamer further comprises a plurality of communication nodes each having at least one input port and at least one output port; a circuit switch connected between the at least one storage node and input ports of the plurality of communication nodes, the circuit switch selectively coupling one or more of the input ports to the at least one storage node to enable the digital representation stored thereat to appear at one or more of the output ports; and at least one control node coupled at least to the plurality of communication nodes and to the at least one storage node for enabling any one of the N blocks to appear at any output port of any of the plurality of communication nodes.") column 3 lines 1-18) and clip placement strategy (("Application commands are issued to media streamer 10 over the control interface. When data load commands are issued, the control node breaks the incoming data file into segments (i.e. data blocks) and spreads it across one or more storage nodes. Material density and the number of simultaneous users of the data affect the placement of the data on storage nodes 16, 17. Increasing density and/or simultaneous users implies the use of more storage nodes for capacity and bandwidth.") Belknap et al., column 8 lines 38-46).

6.   Claims 2, 4, 9-10, 12-13, 15, 17, 22-23 and 25-26 are rejected under 35 U.S.C.

103(a) as being unpatentable over Belknap et al. (US 5668948 A) in view of Kato et al.

(US 20020145702 A1) and in further view of Klemets et al. (US 20030236912 A1).

        Consider claims 2 and 15, as applied to claims 1 and 14, respectively. Belknap et

al., as modified by Kato et al., discloses a system and method of video splitting and

allocation for clustered video servers. However, Belknap et al., as modified by Kato et

al., fails to disclose a method wherein streaming media source files include an Index file

and a Session Description Protocol (SDP) file. Klemets et al. discloses a system and

method for embedding a streaming media format header within a session description

message wherein streaming media source files include an Index file and a Session

Description Protocol (SDP) file (("A multimedia encoder can capture real-time audio and

video data and represent the captured data as multiple streams. For example, audio is

typically represented as one stream and video as another. Complex files can have

multiple streams, some of which may be mutually exclusive. RTSP specifies a

mechanism by which a client can ask a server to deliver one or more of the encoded

media streams. RTSP also provides a way for the client to obtain information about the

contents of the multimedia presentation via SDP message format prior to delivery of the

multimedia. SDP enumerates the available media streams and lists a limited set of

auxiliary information ("SDP metadata") that is associated with the collection of

streams.") paragraph 0008 ("For example, some multimedia encoders capture real-time

audio and video data and save the content as advanced streaming format (ASF) file

(also referred to as active streaming format or advanced system format) as disclosed in

U.S. Pat. No. 6,041,345. ASF is a file format specification for streaming multimedia files

containing text, graphics, sound, video, and animation. An ASF file has objects including

a header object containing information about the file, a data object containing the media

streams (i.e., the captured audio and video data), and an optional index object that can

help support random access to data within the file. The header object of an ASF file

stores information as metadata that is needed by a client to decode and render the

captured data. The list of streams and their relationships to each other is also stored in

the header object of the ASF file. Some of the metadata items may be mutually

exclusive because the metadata items describe the same information using different

spoken languages. SDP fails to adequately describe content encoded in ASF.")

paragraph 0010).

    Belknap et al., as modified by Kato et al., discloses a prior art media streamer

with console node enabling same isochronous streams to appear simultaneously at

output ports or different streams to appear simultaneously at output ports upon which

the claimed invention can be seen as an improvement.

    Klemets et al. teaches a prior art comparable device (system and method for

embedding a streaming media format header within a session description message)

wherein streaming media source files include an Index file and a Session Description

Protocol file.

    Thus, the manner of enhancing a particular device (system and method for

embedding a streaming media format header within a session description message)

was made part of the ordinary capabilities of one skilled in the art based upon the

teaching of such improvement in Klemets et al. Accordingly, one of ordinary skill in the

art would have been capable of applying this known improvement technique in the

same manner to the prior art media streamer with console node enabling same

isochronous streams to appear simultaneously at output ports or different streams to

appear simultaneously at output ports of Belknap et al., as modified by Kato et al., and

the results would have been predictable to one of ordinary skill in the art, namely, one

skilled in the art would have readily recognized that a multicast system and method

capable of multimedia applications can accept files containing session descriptions.

Consider claims 4 and 17, as applied to claims 2 and 15, respectively. Belknap et

al., as modified by Kato et al. and Klemets et al., discloses a method wherein the SDP

file includes a media type, a number of streams included in a video source, a time

length of the video source and an ID of a streaming session (("In addition, the Real-time

Streaming Protocol (RTSP), as described in the IETF RFC 2326, the entire disclosure of

which is incorporated herein by reference, is an application-level protocol for control of

the delivery of data with real-time properties. RTSP provides an extensible framework to

enable controlled, on-demand delivery of real-time data, such as audio and video.

Sources of data can include both live data feeds and stored clips. This protocol is

intended to control multiple data delivery sessions, provide a means for choosing

delivery channels such as user datagram protocol (UDP), multicast UDP and

transmission control protocol (TCP), and provide a means for choosing delivery

mechanisms based upon RTP. Further, the Session Description Protocol (SDP), as

described in the IETF RFC 2327, the entire disclosure of which is incorporated herein

by reference, is an application level protocol intended for describing multimedia

sessions for the purposes of session announcement, session invitation, and other forms

of multimedia session initiation. SDP can be used in conjunction with RTSP to describe

and negotiate properties of the multimedia session used for delivery of real-time data.")

Klemets et al., paragraphs 0006-0007 ("The invention provides for embedding a

streaming media format header within a session description message describing

content having a plurality of media streams in a streaming media session. In particular,

the invention includes software with data structures for encapsulating and embedding

the streaming media format header within the session description message. In addition,

the invention software embeds a list of content descriptions attributes storing metadata

about the media streams within the session description message. A media description

field in the session description message stores a stream attribute identifying a media

stream associated with the media description field.") Klemets et al., paragraph 0012).

        Consider claims 9 and 22, as applied to claims 2 and 15, respectively. Belknap et

al., as modified by Kato et al. and Klemets et al., discloses a method wherein the

splitting of the media source file comprises reading the Index file (Klemets et al.,

paragraph 0010) to obtain a number of clips, and creating several threads according to

the obtained number (("A thread in each storage node 16 that the open request is sent

to receive the request and opens the requested stripe file and allocate any needed

resources, as well as scheduling input from disk (if the stripe file contains the first few

segments).") Belknap et al., column 17 lines 35-39).

Consider claims 10 and 23, as applied to claims 9 and 22, respectively. Belknap

et al., as modified by Kato et al. and Klemets et al., discloses a method comprising

reading the Index file and obtaining a play task list including several items, and sending

each item in the play task list to relevant threads creating a splitting task (("Three

additional commands support automation control systems in the broadcast industry: VS-

CONNECT-LIST, VS-PLAY-AT-SIGNAL and VS-RECORD-AT-SIGNAL. VS-

CONNECT-LIST allows applications to specify a sequence of play commands in a

single command to the subsystem. Media streamer 10 will execute each play command

as if it were issued over the control interface but will transition between the delivery of

one stream and the next seamlessly.") Belknap et al., column 9 lines 56-64).

Consider claims 12 and 25, as applied to claims 11 and 24, respectively. Belknap

et al., as modified by Kato et al. and Klemets et al., discloses a method wherein the clip

placement strategy includes a data placement strategy, a hot level of a source video,

and an algorithm for allocating clips to the relevant storage server nodes (("As demand

for "hot" movies grows, media streamer 10, through an MRU-based algorithm, decides

to move key movies up into cache. This requires substantial cache memory, but in

terms of the ratio of cost to the number of active streams, the high volume that can be

supported out of cache lowers the total cost of the media streamer 10.") Belknap et al.,

column 12 lines 8-13 ("Algorithms that control the placement and distribution of the

content across all of the storage media enable delivery of isochronous data to a wide

spectrum of bandwidth requirements. Because the delivery of isochronous data is

substantially 100% predictable, the algorithms are very much different from the

traditional ones used for other segments of the computer industry where caching of

user-accessed data is not always predictable.") Belknap et al., column 12 lines 19-26).

Consider claims 13 and 26, as applied to claims 1 and 14, respectively. Belknap

et al., as modified by Kato et al. and Klemets et al., discloses a method wherein the

structure of the network packet complies with a streaming media data message in

international real-time transmission protocol, including media type head, serial number,

time stamp, synchronous signal, and main media data (("In one embodiment, the

streaming media format file header is encoded as a data URL. Typically, URLs refer to

content that it stored at a remote location. However, in the case of a data URL, the

content is stored inside the URL itself. The specification for the data URL allows

arbitrary binary data to be included, if Base64 encoding is used to encode the binary

data into a subset of the US-ASCII character set. In addition, the header attribute 504

comprises a type tag identifying the value as representing the streaming media format

header. For example, the data URL allows a multipurpose Internet mail extension

(MIME) tag type to be specified. The MIME type is used to identify the type of content

that is contained within the data URL. In one embodiment, the MIME type

"application/vnd.ms-wms-hdr.asfv1" identifies that a data URL contains a streaming

media format file header.") Klemets et al., paragraph 0049 ("where <Stream ID> is

replaced with the stream identifier of the stream in the streaming media format file that

corresponds to the media that is described in the SDP media description section (e.g.,

media description 514 or media description 516). The stream attribute 508, 510

establishes a mapping between the stream identifier and the URL in a control attribute

of the media description field 514, 516. If the streaming media format is ASF, the stream

attribute 508, 510 gives the numerical ASF stream identifier of a stream identified in the

ASF header 504. The stream attribute 508, 510 is used to provide a mapping between a

media description field and a stream in the streaming media format file. An example of

the control attribute and the stream attribute 508, 510 follow.") Klemets et al., paragraph

0056 ("More particularly, given videos v1, v2, . . . , and streams s1, s2, . . . playing these

videos, each stream sj plays one video, v(sj), and the time predicted for writing the k-th

segment of v(sj) is a linear function where a(sj) depends on the start time and starting

segment number, r(sj) is the constant time it takes to play a segment, and t(sj,k) is the

scheduled time to play the k-th segment of stream sj.") Belknap et al., column 25 lines

8-18 ("The storage node thread sends a response back to the communication node 14

with the handle (identifier) for the stripe file.") Belknap et al., column 17 lines 40-

42 ("Except as indicated below, API functions are processed synchronously, i.e., once a

function call is returned to the caller, the function is completed and no additional

processing at media streamer 10 is needed. By configuring the API functions as

synchronous operations, additional processing overheads for context switching,

asynchronous signaling and feedbacks are avoided. This performance is important in

video server applications due to the stringent real-time requirements.") Belknap et al.,

column 20 lines 56-64).

7.   Claims 3, 8, 16 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Belknap et al. (US 5668948 A) in view of Kato et al. (US

20020145702 A1) in further view of Klemets et al. (US 20030236912 A1) and in further

view of Asit et al. (US 5530557 A).

        Consider claims 3 and 16, as applied to claims 2 and 15, respectively. Belknap et

al., as modified by Kato et al. and Klemets et al., discloses a method wherein an Index

File includes a transmitting task list, a file name of a video source, a storage space of

the video source, a time length of the video source, and a clip file number of the video

source. However, Belknap et al., as modified by Kato et al. and Klemets et al., fails to

disclose a wherein an Index File includes a hot spot of the video source. Asit et al.

discloses online placement of video files determined by a function of the bandwidth to

space ratio of each of the storage devices in a server environment comprising a method

for determining expected demand (read as hot spots) of videos (("In a video-on-demand

server with multiple disks and video files (e.g. movies), it is necessary to determine

which video files are to be placed on which disks. Each disk is limited both by the

amount of bandwidth and space, i.e., the number of video data streams that can be

played simultaneously and the number of video files that can be accommodated. The

expected demands for different videos are non-uniform. The expected demand for some

videos may be low enough that they can be satisfied from one disk or striped set of

disks. On the other hand, the expected demand for some videos may be so high that

multiple replicas are needed.") column 1 lines 13-24).

Belknap et al., as modified by Kato et al. and Klemets et al., discloses a prior art

multicast system and method capable of multimedia applications can accept files

containing session descriptions upon which the claimed invention can be seen as an

improvement.

Asit et al. teaches a prior art comparable device (online placement of video files

determined by a function of the bandwidth to space ratio of each of the storage devices

in a server environment) comprising a method for determining hot spots.

Thus, the manner of enhancing a particular device (online placement of video

files determined by a function of the bandwidth to space ratio of each of the storage

devices in a server environment) was made part of the ordinary capabilities of one

skilled in the art based upon the teaching of such improvement in Asit et al.

Accordingly, one of ordinary skill in the art would have been capable of applying this

known improvement technique in the same manner to the prior art multicast system and

method capable of multimedia applications can accept files containing session

descriptions of Belknap et al., as modified by Kato et al. and Klemets et al., and the

results would have been predictable to one of ordinary skill in the art, namely, one

skilled in the art would have readily recognized a system and method of on-demand

streaming.

Consider claims 8 and 21, as applied to claims 1 and 14, respectively. Belknap et al., as modified by Kato et al., Klemets et al. and Asit et al., discloses a method wherein the splitting task list is produced by analyzing the media source files to find a space and time deviation of each clip file and a range of a serial number of the network packet (("A flowchart of the processing of a command to configure the system to set the expected number of viewers for a video (V) to a new number of viewers (N) is shown in FIGS. 2A-2E. There are two phases to the process. In phase 1, as detailed in FIGS. 2A-2E, the VPM decides if additional replicas are needed. If so, the VPM selects the disks on which the additional replicas are to be created in phase I. The selection is made so as to minimize the deviation of the expected bandwidth-space ratio of the disk from the actual bandwidth-space ratio of the disk. In phase II (detailed in FIGS. 3A-3D), the expected viewers are allocated to the replicas and the number of replicas are consolidated.") Asit et al., column 3 lines 50-61 ("The encoder 102 creates a streaming media format file that stores real-time media content such as audio and video. For example, the streaming media format may be an advanced streaming format (ASF) such as illustrated in FIG. 2 (also referred to as active streaming format or advanced system format). In FIG. 2, audio and video data are stored as separate media streams in the file in a data field 202. Each stream is assigned a stream identifier such as a number. In one embodiment of ASF, stream identifiers are integer numbers in the range 1 to 63 inclusive. The streaming media format has a header field 204 listing the stream identifiers and information about each stream. For example, the header field 204 may include stream #1 information 206 through stream #M information 208. Each stream

identifier corresponds to one of the media streams. The header field 204 stores

metadata for each stream, such as the encoded bit rate and the language (if

applicable). The ASF file in FIG. 2 also has an optional index field 210.") Klemets et al.,

paragraph 0035).

Response to Arguments

8.   Applicant's arguments filed 01 December 2008 with respect to claims 1-2, 14-15

and 27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9.   Any response to this Office Action should be faxed to (571) 273-8300 or mailed

to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

        Hand-delivered responses should be brought to

                Customer Service Window
                Randolph Building
                401 Dulany Street
                Alexandria, VA 22314

        Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Mark Fearer whose telephone number is (571) 270-

1770. The Examiner can normally be reached on Monday-Thursday from 7:30am to

5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tonia Dollinger can be reached on (571) 272-4170. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Mark Fearer
/M.D.F./
March 6, 2009

/George C Neurauter, Jr./
Primary Examiner, Art Unit 2443